

LEGEND

Powhatan Creek Watershed	Proposed RPA Extension	Proposed Conservation Areas	Undeveloped Land
Subwatershed Boundary	Priority Regional Stormwater Management Sites	Conservation Area ID	Low Density Residential
Rpa	Priority Retrofit Sites	Bald Eagle Nest	Medium Density Residential
Rpa buffer	Potential Retrofit Sites ID	Blue Heron Colony	High Density Residential
Hydrology	Catchment Boundaries	RTE Plants	Mixed Use
Roads	Catchment Boundaries ID	Historical Points of Interest	Limited Industry/Business
	Potential Stream Rehabilitation Area		Rural

Powhatan Creek Watershed Subwatershed 204

900 0 900 1800 Feet



Subwatershed No. 204 (FORDS COLONY)

OVERALL PROGNOSIS:

This small subwatershed also encompasses portions of the Fords Colony PUD. Currently classified as borderline IMPACTED, it is presently shifting into the IMPACTED with current development. Less than 1% of the subwatershed is protected within the RPA, and few conservation areas are present. Few contiguous forests and wetlands exist and several sections of stream have been piped. The stream channel network is dominated by several large stormwater ponds which serve 100% of the existing development. Stream habitat scores reflect these conditions; Subwatershed 204 received the third lowest stream habitat scores recorded anywhere in the watershed. This may be a watershed that is appropriate for continued growth because of the existing stormwater management, low stream habitat scores and absence of conservation areas. Allowances for up-zoning should be considered for this subwatershed.

See Figure

Drainage Area: 0.85 sq. miles (540.9 acres)

Land Use in Subwatershed 204

	<i>Percentage</i>	<i>Subwatershed Category</i>
2000 Impervious Cover	10.0 %	Impacted
Future impervious cover (with buildout)	14.2 %	Impacted
Target Watershed Classification		Impacted

Developable area: 141.6 acres or 26% of subwatershed area

Conservation Areas in 204

No high priority conservation areas in subwatershed 206. There are opportunities for possible RPA Buffer extension

Wetland areas: Wetlands only exist between the lowermost golf course pond and the confluence with the mainstem of Powhatan Creek.

Powhatan Creek Watershed Management Report

Stream Conditions in 204

Table 204-1. General Stream Condition in Subwatershed 204		
Stream Quality	Description	Rank
<i>Fair</i>	<i>Natural hydrology of streams is highly affected by ponds, golf courses and development in this subwatershed.</i>	<i>8 of 11</i>

Habitat assessment: Stream assessment scores indicate only Fair/Good habitat conditions in free-flowing streams-- the third lowest score recorded anywhere in the watershed. The stream corridor has been heavily influenced by development, including in-stream stormwater and golf course ponds, as well as poor vegetation in portions of the RPA. As a result, significant stream mileage has been impounded. In addition, the stream channels between the ponds have been piped.

Stormwater Management in 204

Subwatershed 204 has been divided into 3 catchments. About two-thirds of Subwatershed 204 fall within Ford's Colony, whereas the remaining area lightly developed as rural residential, general agriculture, and limited business. Primary stormwater strategies for the subwatershed include on-site stormwater management for new development to limit disturbance to recommended conservation areas, introducing the use of on-lot practices to reduce stormwater runoff and pollutant loading, pondscaping existing facilities with native wetland species, and reforestation of riparian areas.

Table 204-2. Potential Stormwater Retrofit Areas			
Potential Retrofits	Type of Retrofit and Rank		Benefit
	Regional Ponds for Future Development	Stormwater Retrofit	
<i>204-1</i>	<i>5 of 9</i>	<i>--</i>	<i>Regional stormwater management pond for water quality and channel protection.</i>

Other Notes:

Much of the development in the subwatershed was built prior to the Chesapeake Bay Preservation Act, which explains the reduced buffers found in the area. On the positive side, the Ford's Colony development, which spans subwatersheds 203 and 204 and parts of 207, is managed as a single unit, which may make it easier to plan and implement future restoration plans.

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Recommendations for Subwatershed 204

Watershed Education

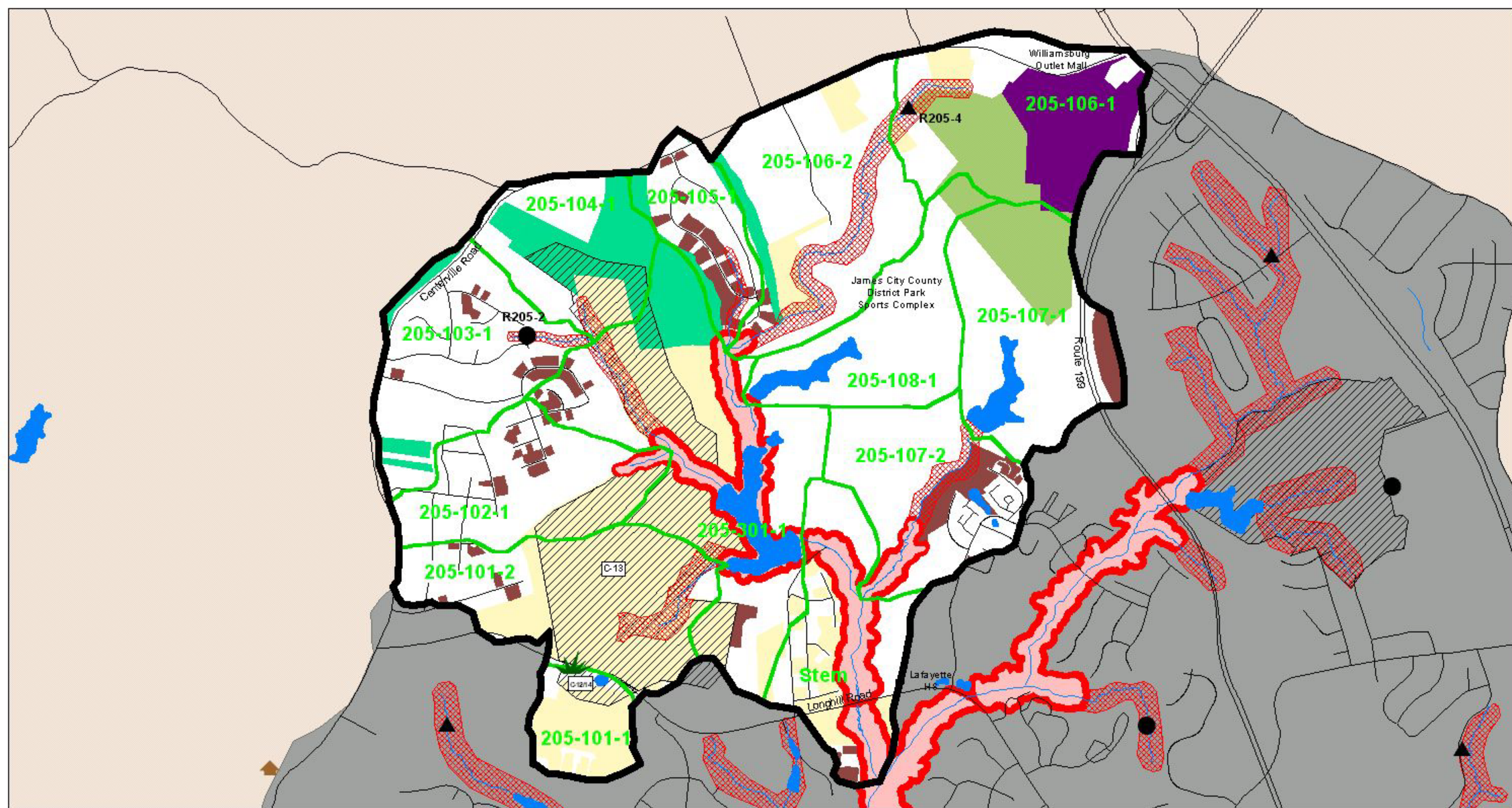
- Homeowner education on low impact lawn care, pet waste, and other water quality issues (Appendix 1-3)

Aquatic Buffers

- Look for opportunities to increase stream buffers

Stormwater Management

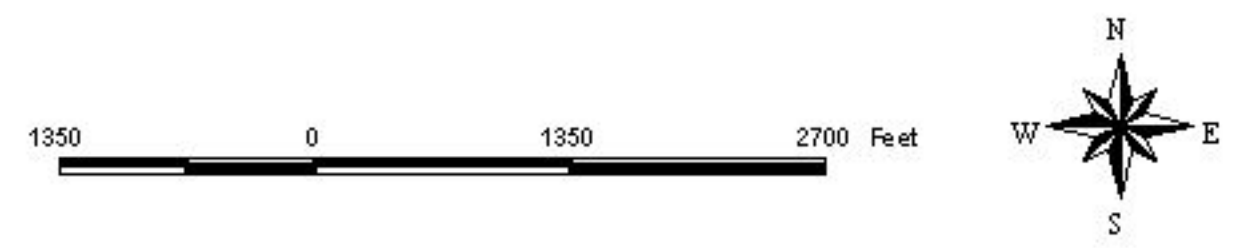
- Naturescaping golf course ponds (i.e. planting native wetland plants for better nutrient uptake and natural aesthetics)



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|--------------------------|---|-------------------------------|----------------------------|
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| Rpa | Priority Retrofit Sites | Bald Eagle Nest | Medium Density Residential |
| Rpa buffer | Potential Retrofit Sites ID | Blue Heron Colony | High Density Residential |
| Hydrology | Catchment Boundaries | RTE Plants | Mixed Use |
| Roads | Catchment Boundaries ID | Historical Points of Interest | Limited Industry/Business |
| | Potential Streams Rehabilitation Area | | Rural |

Powhatan Creek Watershed Subwatershed 205



Powhatan Creek Watershed Management Report

Subwatershed No. 205

OVERALL PROGNOSIS:

Currently, this subwatershed has the highest quality of any subwatershed in the Powhatan Creek watershed, and is classified as SENSITIVE. The streams are rated as having the best stream habitat in the watershed and a small wetland contains two RTE species. Subwatershed 205 also has the greatest growth potential of any subwatershed, as more than 50% of its area remains developable under current zoning. The Center recommends that this subwatershed Given its modest RPA protection (less than 4% of total area), and projected impervious cover (11%), this subwatershed is projected to shift into the IMPACTED category without effective watershed management.

See Figure

Drainage Area: 2.53 sq. miles (1,619.2 acres)

Land Use in Subwatershed 205

	<i>Percentage</i>	<i>Subwatershed Category</i>
2000 Impervious Cover	6.4 %	Sensitive
Future impervious cover (with buildout)	13.3 %	Impacted
Target Watershed Classification		Sensitive

Developable area: 867 acres or 54% of subwatershed area

Priority Conservation Areas in 205

<i>Table 205-1. Priority Conservation Areas in Subwatershed 205</i>			
<i>Conservation Area</i>	<i>Description</i>	<i>Conservation Area Ranking</i>	<i>Acquisition Ranking</i>
C-12/14	<i>Small pocket wetland with rare species -- the drainage is currently under development</i>	<i>3 of 21</i>	<i>--</i>
C-13	<i>Excellent quality streams and a small tract of mature hardwood contiguous forest</i>	<i>11 of 21</i>	<i>15 of 17</i>

Presence of RTE species: Confirmed populations of New Jersey Rush and historically Torreys Peat Moss (VA Natural Heritage).

Wetland areas: One exceptional wetland (about 0.5 to 0.7 acres in size) is the home to the RTE plant population. This wetland and its contributing drainage is a prime candidate for immediate land conservation, better site design and innovative stormwater practices. Adjacent development has the potential to adversely influence this important wetland.

Powhatan Creek Watershed Management Report

In addition, the lower portions of this subwatershed contain the upper reaches of Longhill Branch Swamp, which is one of the largest wetland complexes in the entire watershed.

Stream Conditions in 205

Table 205-2. General Stream Condition in Subwatershed 205		
Stream Quality	Description	Rank
<i>Excellent</i>	<i>Highest Quality streams in the watershed</i>	<i>1 of 11</i>

Habitat assessment: Stream assessment scores indicate streams in this subwatershed have the best habitat scores within the entire Powhatan Creek watershed. Typical characteristics include an intact forested stream valley, stable streambanks, good to excellent in-stream habitat and little or no evidence of channel instability.

Stormwater Management in 205

Subwatershed 205 has been divided into 13 catchments. The streams within subwatershed 205 received the highest rating in the stream assessment and are recommended Stream Protection Areas. Also, the subwatershed is considered the best candidate for preservation in the watershed. The major stormwater management strategy involves using on-site stormwater management per the recommended Special Stormwater Criteria, in conjunction with cluster or open space design, to limit disturbance to recommended conservation areas and stream valleys.

Table 205-3. Priority Stormwater Retrofit Areas			
Retrofits	Type of Retrofit and Rank		Benefit
	Regional Ponds for Future Development	Stormwater Retrofit	
205-2		3 of 17	<i>Retrofit of existing dry pond to provide channel protection and possibly water quality treatment..</i>
205-4	4 of 9	--	<i>Potential regional facility to manage runoff from future development as well as from the existing rural residential development.</i>

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Other Observations in Subwatershed 205

Evidence of poor logging practices within and near the stream valley, which generates erosion and fragments remaining forests.

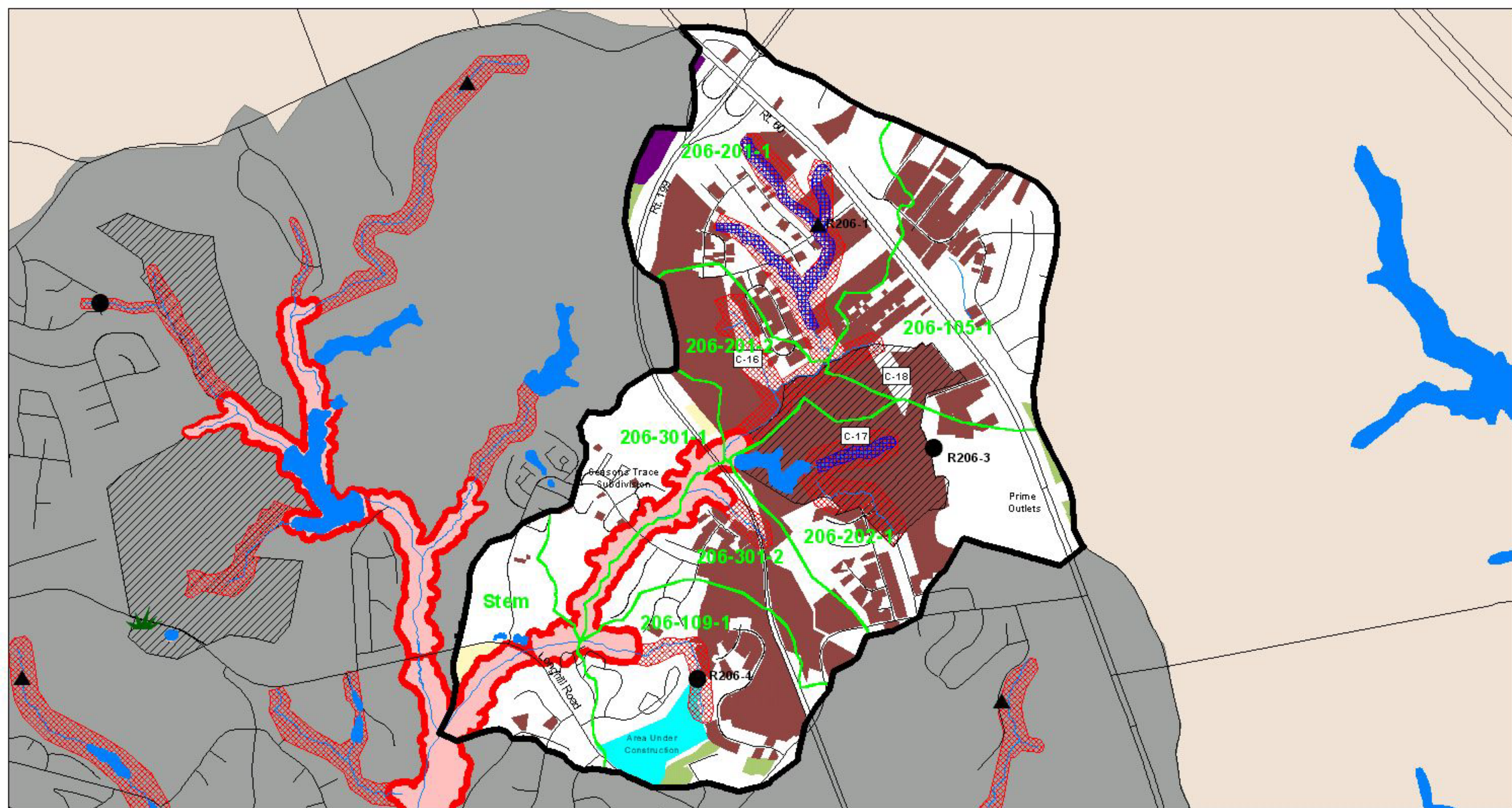
Recommendations for Subwatershed 205

Land Conservation

- Acquisition/easement of C-13 parcel
- Continued agricultural zoning adjacent to C-13
- Possible down zone of limited industry/commercial area not draining to regional pond
- Impervious cover cap for the subwatershed

Stormwater Management

- Special Stormwater Criteria for sites not draining to a regional facility (see catchment 205-106-1)
- Special Stormwater Criteria for site draining to a the small pocket wetland (see conservation areas C-12/14)

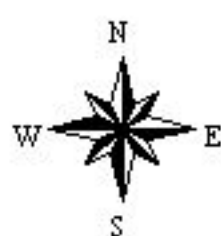


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Powhatan Creek Watershed	Proposed RPA Extension	Proposed Conservation Areas	Undeveloped Land
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Hydrology	Catchment Boundaries	RTE Plants	Mixed Use
Roads	Catchment Boundaries ID	Historical Points of Interest	Limited Industry/Business
	Potential Stream Rehabilitation Area		Rural

Powhatan Creek Watershed Subwatershed 206

1400 0 1400 2800 Feet



Powhatan Creek Watershed Management Report

Subwatershed No. 206 (UPPER LONGHILL SWAMP)

OVERALL PROGNOSIS:

This subwatershed has seen the greatest growth in the last few years, and is currently classified as **IMPACTED**. Given that 39% of the subwatershed could still be developed under current zoning, this subwatershed's impervious cover may approach 22% in the future. Significant findings within the subwatershed include: remaining contiguous forest tracts have been logged or cleared, current RPA protection is limited (only 3% of subwatershed area), and stream habitat scores indicate recent degradation and channel incision in several reaches. This subwatershed is a candidate for intensive restoration.

See Figure

Drainage Area: 2.06 sq. miles (1,316.7 acres)

Land Use in Subwatershed 206

	<i>Percentage</i>	<i>Subwatershed Category</i>
2000 Impervious Cover	16.9 %	Impacted
Future impervious cover (with buildout)	22.4 %	Impacted
Target Watershed Classification		Impacted

Developable area in subwatershed: 515.4 acres or 39% of subwatershed area

Conservation Areas in 206

No high priority conservation areas in subwatershed 206. There are opportunities for expansion and protection of stream buffers.

Stream Conditions in 206

<i>Table 206-1. General Stream Condition in Subwatershed 206</i>		
<i>Stream Quality</i>	<i>Description</i>	<i>Rank</i>
<i>Fair</i>	<i>high incidence of floodplain impairment, good candidate for stream restoration</i>	<i>9 of 11</i>

Habitat assessment: Stream assessment scores indicate streams in upper headwaters of the subwatershed were in the fair/good habitat condition, and overall ranked seventh out of the ten subwatersheds. Several individual stream reaches were showing signs of stream degradation and head cutting, particularly in headwater areas close to intense development or construction. These reaches which could be candidates for stream restoration are located in catchments 201-1 and 202-1.

Powhatan Creek Watershed Management Report

Stormwater Management in 206

Divided into 8 catchments, this subwatershed is highly developed compared to other subwatersheds in the Powhatan Creek watershed, and is considered a candidate for restoration. Primary stormwater strategies include the use of stormwater management per the current James City County standards for new development in combination with stormwater retrofitting. Catchments that are fully or almost fully developed may require no additional stormwater action.

Table 206-2. Priority Stormwater Retrofit Areas			
Retrofits	Type of Retrofit and Rank		Benefit
	Regional Ponds for Future Development	Stormwater Retrofit	
206-1	1 of 9	--	Regional pond to manage stormwater runoff from new development as well as from uncontrolled, existing development. This may be constructed in conjunction with the potential stream rehabilitation.
206-3	--	5 of 17	Retrofit of the dry pond serving the Prime Outlets, for channel protection. This may be done in conjunction with stream rehabilitation.
206-4	--	6 of 17	Retrofit of dry pond for channel protection and water quality treatment.

Recommendations for Subwatershed 206

Land Conservation

- Consider allowing the 30%/40% open space requirement to be acquired elsewhere in the Powhatan Creek watershed within one of the conservation areas or within the expanded mainstem buffer (open space trading).

Restoration

- Stream restoration associated with the Prime Outlets retrofit
- Stream restoration associated with the degraded stream channel conditions found in the northern tributary of subwatershed 206 (catchment 201-1).

Stormwater Management

- Retrofit of the dry pond draining Prime Outlets to minimize erosion and downcutting of the downstream channel
- Possible regional pond to address future medium density development